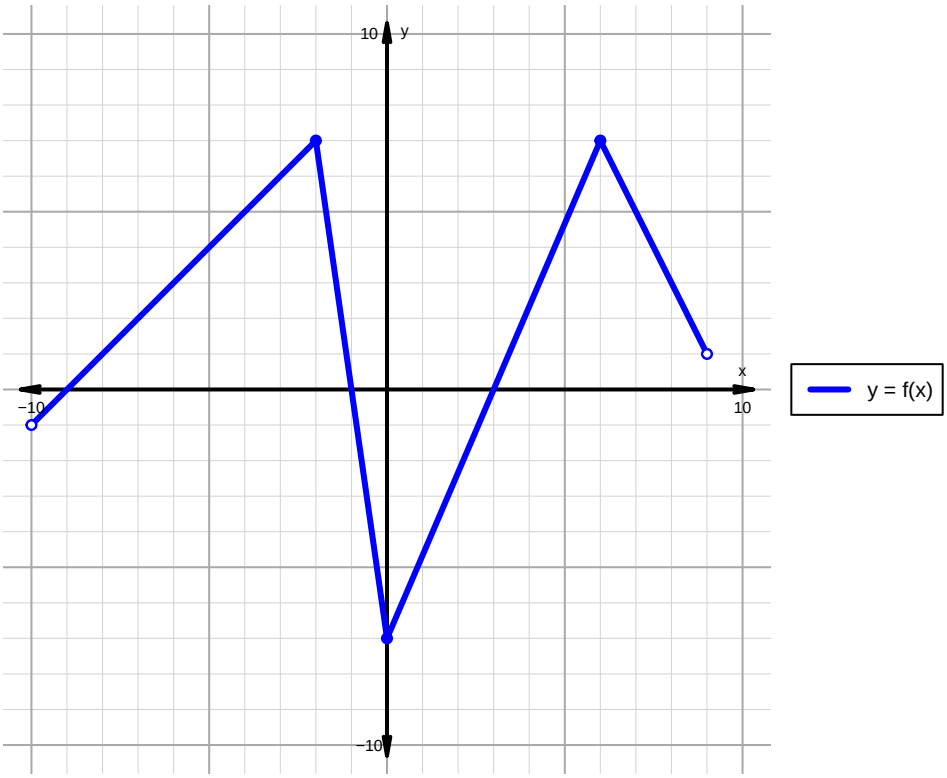
Name: Date:

Intervals, Transformations, and Slope Solution (version 49)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-9,-1) \cup (3,9)$
Negative	$(-10,-9) \cup (-1,3)$
Increasing	$(-10,-2) \cup (0,6)$
Decreasing	$(-2,0) \cup (6,9)$
Domain	$(-10,9)$
Range	$(-7,7)$

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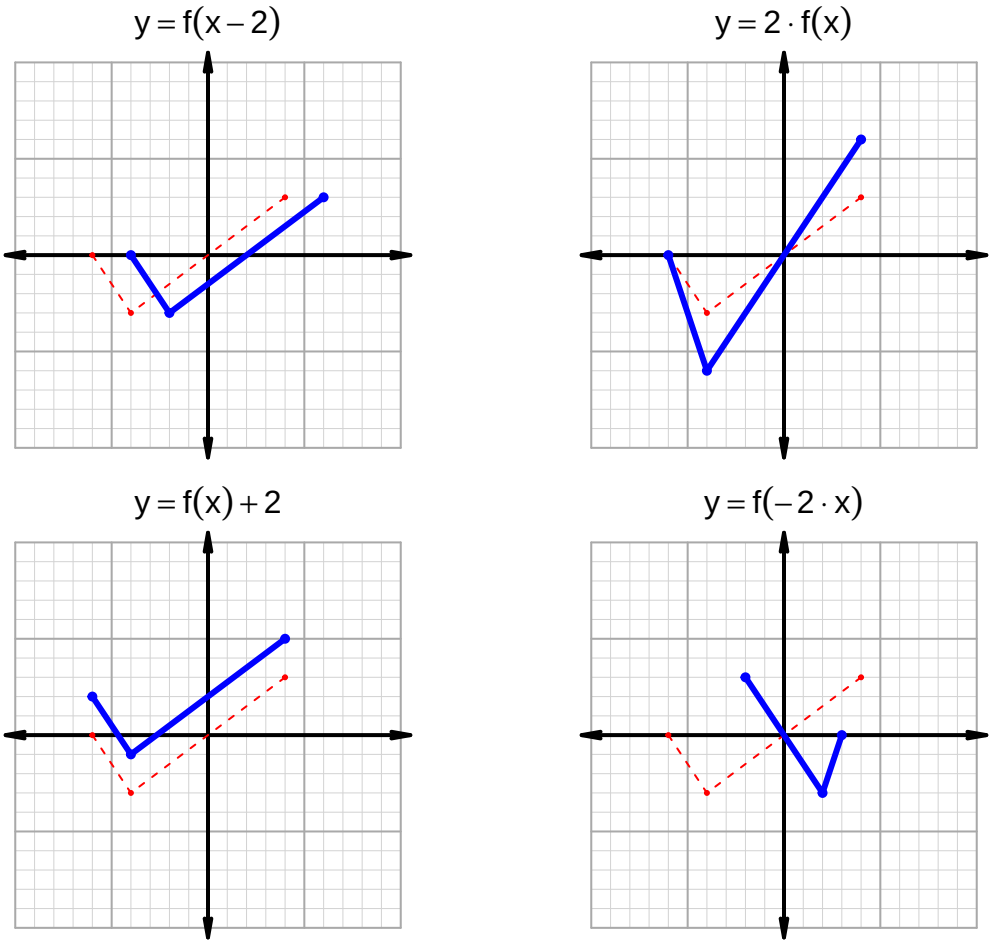
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. Please add the indicated transformed graphs indicated by the equations below using a solid line.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 44$ and $x_2 = 69$. Express your answer as a reduced fraction.

x	$g(x)$
15	44
44	55
55	69
69	15

$\frac{f(69)-f(44)}{69-44} = \frac{15-55}{69-44} = \frac{-40}{25}$

The greatest common factor of -40 and 25 is 5. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{-8}{5}$$